

$$\begin{aligned} 7. \quad 2x + 3y &= 6 \\ -3x + 2y &= 17 \end{aligned}$$

$$\begin{aligned} 8. \quad -4x + y &= -26 \\ 3x - y &= 17 \end{aligned}$$

VIII. Radicals

Perform the indicated operations and/or simplify:

For Geometry Students

$$1. \sqrt{100}$$

$$10$$

$$2. \sqrt{\frac{169}{121}}$$

$$\frac{13}{11}$$

$$3. \sqrt{75}$$

$$\sqrt{25} \cdot \sqrt{3} = 5\sqrt{3}$$

$$4. \sqrt{80}$$

$$\sqrt{16} \sqrt{5} = 4\sqrt{5}$$

$$5. \sqrt{10} \cdot \sqrt{30}$$

$$\sqrt{300} = \sqrt{100} \sqrt{3} = 10\sqrt{3}$$

$$6. 2\sqrt{5} \cdot \sqrt{5}$$

$$2 \cdot 5 = 10$$

$$7. \sqrt{\frac{3}{7}} = \frac{\sqrt{3}}{\sqrt{7}} \cdot \frac{\sqrt{7}}{\sqrt{7}}$$

$$= \frac{\sqrt{21}}{7}$$

$$8. 7\sqrt{30} \cdot 2\sqrt{6}$$

$$\begin{aligned} 14\sqrt{180} \\ 14\sqrt{36} \sqrt{5} \\ 14 \cdot 6 \cdot \sqrt{5} \\ 84\sqrt{5} \end{aligned}$$

$$9. \frac{\sqrt{5}}{\sqrt{10}} \cdot \frac{\sqrt{10}}{\sqrt{10}} = \frac{\sqrt{50}}{10} = \frac{\sqrt{25} \sqrt{2}}{10} = \frac{5\sqrt{2}}{10} = \frac{\sqrt{2}}{2}$$

$$10. \sqrt{72}$$

$$\sqrt{36} \sqrt{2} = 6\sqrt{2}$$

$$11. 4\sqrt{3} + 7\sqrt{3} - 2\sqrt{3}$$

$$11\sqrt{3} - 2\sqrt{3} = 9\sqrt{3}$$

$$12. 2\sqrt{11} - 6\sqrt{11} - 3\sqrt{11}$$

$$\begin{aligned} -4\sqrt{11} - 3\sqrt{11} \\ -7\sqrt{11} \end{aligned}$$

$$13. 4\sqrt{6} + \sqrt{7} - 6\sqrt{6} + 4\sqrt{7}$$

$$-2\sqrt{6} + 5\sqrt{7}$$

$$14. 2\sqrt{3} + \sqrt{12}$$

$$\begin{aligned} 2\sqrt{3} + \sqrt{4} \sqrt{3} \\ 2\sqrt{3} + 2\sqrt{3} \\ 4\sqrt{3} \end{aligned}$$

$$15. 2\sqrt{50} - 3\sqrt{32}$$

$$\begin{aligned} 2\sqrt{25} \sqrt{2} - 3\sqrt{16} \sqrt{2} \\ 2 \cdot 5 \cdot \sqrt{2} - 3 \cdot 4 \sqrt{2} \\ 10\sqrt{2} - 12\sqrt{2} \\ -2\sqrt{2} \end{aligned}$$

$$16. 5\sqrt{10} \cdot 3\sqrt{10}$$

$$\begin{aligned} 15\sqrt{100} \\ 15 \cdot 10 \\ 150 \end{aligned}$$

$$17. 8\sqrt{10} \cdot 5\sqrt{2}$$

$$\begin{aligned} 40\sqrt{20} \\ 40 \cdot \sqrt{4} \sqrt{5} \\ 40 \cdot 2 \cdot \sqrt{5} \\ 80\sqrt{5} \end{aligned}$$